

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN I. SHIPP

Appeal No. 1999-2039
Application No. 08/531,424

ON BRIEF

Before THOMAS, KRASS, and BARRY, Administrative Patent Judges.
BARRY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from an examiner's rejection of claims 10-17, 18, and 29-36. We reverse.

BACKGROUND

The appellant's light source is mounted in the distal end of an endoscope to illuminate an object within a bodily cavity. A series of four red, fourteen green, and ten blue light-emitting-diodes (LEDs) is mounted and arranged on a

ceramic substrate in a circular pattern concentrically around the optical path of the endoscope. A reflector cup surrounds each LED to control the angular distribution of light emitted by the LED. The LEDs are electrically wired to an illumination circuit that triggers them to emit red, green, and blue light, respectively, in synchronization with the field period of an endoscopic camera. The appellant asserts that mounting the LEDs in the distal end of the endoscope avoids the loss of light through fiber optics cables and connections that plagues the prior art and that it eliminates the prior art's need to sterilize the cables and connections.

Claim 15, which is representative for present purposes, follows:

15. A compact light source for illuminating an object while in a body cavity, said light source comprising first, second, and third color LED's fixed to a common substrate, said first, second, and third color LED's electrically connected to said substrate and to each other in a pattern whereby said first, second and third color LED's can be separately operated in a sequential manner; said first, second, and third color LED's arranged in a generally concentric pattern surrounding a light transmissive aperture centrally disposed in said substrate in the center of said pattern, and said substrate and aperture having a central axis coaxial

with a central axis of an objective lens system of an endoscopic camera used in conjunction with said compact light source.

The prior art applied by the examiner in rejecting the claims follows:

Kakinuma et al. (Kakinuma) 1978	4,074,306	Feb. 14,
Pileski et al. (Pileski) 10, 1995	5,379,756	Jan.
	(filed Sep. 11, 1992)	
Nagasaki 1986	4,633,304	Dec. 30,
Uehara et al. (Uehara) 1989	4,868,647	Sep. 19,
Moore et al. (Moore) 1981.	4,253,447	Mar. 3,

Claims 10, 11, 15, 17, and 19 stand rejected under 35 U.S.C. § 103(a) as being obvious over Kakinuma in view of Pileski. Claims 29-34 and 36 stand rejected under § 103(a) as being obvious over Kakinuma in view of Pileski further in view of Nagasaki. Claims 29-34 and 36 stand rejected under § 103(a) as being obvious over Kakinuma in view of Pileski further in view of Nagasaki even further in view of Uehara. Claims 12

and 13 stand rejected under § 103(a) as being obvious over Moore in view of Kakinuma further in view of Pileski. Claim 14 stands rejected under § 103(a) as being obvious over Moore in view of Kakinuma further in view of Pileski even further in view of Nagasaki. Rather than reiterate the arguments of the appellant or examiner in toto, we refer the reader to the brief and answer for the respective details thereof.

OPINION

After considering the record, we are persuaded that the examiner erred in rejecting claims 10-17, 18, and 29-36. Accordingly, we reverse. We begin by summarizing the examiner's rejection and the appellant's argument.

Admitting that "Kakinuma et al does not particularly disclose ... light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture in the center of the pattern," (Examiner's Answer at 4-5), the examiner asserts, "[i]t is considered obvious that the light emitting diodes of Kakinuma et al may be provide in place of the optical fibers of Pileski et al for the same

lighting purposes. Therefore, it would have been obvious to one of ordinary skill in the art, having the Kakinuma et al and Pileski et al references in front of him/her and the general knowledge of imaging techniques within an endoscope, would have had no difficulty in providing surround lighting techniques within an endoscope as taught by Pileski et al for the endoscope system of Kakinuma et al for the same well known purposes as claimed." (Id. at 5.) The appellant argues, "Pileski and Kakinuma do not teach an internal light source (i.e. light source capable of being inserted into a body cavity) mounted at a distal end of an endoscope concentric about a light aperture and axially aligned with the endoscope sheath." (Appeal Br. at 13.)

Claims 10 and 11 specify in pertinent part the following limitations: "b. illumination means mounted at the distal end of said sheath; ... e. the illumination means comprising a plurality of light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture in the center of said pattern, said central aperture having a central axis aligned with and coaxial with a central

axis of said objective lens system and with a central axis of said sheath." Similarly, claims 12-14 specify in pertinent part the following limitations: "illumination means mounted at the distal end of a camera sheath, the illumination means comprising a plurality of light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture, said central aperture having a central axis coaxially aligned with a central axis of said camera sheath" Also similarly, claims 15 and 16 specify in pertinent part the following limitations: "[a] compact light source for illuminating an object while in a body cavity, said light source comprising first, second, and third color LED's fixed to a common substrate, ... said first, second, and third color LED's arranged in a generally concentric pattern surrounding a light transmissive aperture centrally disposed in said substrate in the center of said pattern, and said substrate and aperture having a central axis coaxial with a central axis of an objective lens system of an endoscopic camera used in conjunction with said compact light source." Similarly, claims 17 and 19 specify in pertinent part the following limitations: "illumination means for emitting light from said

system toward an object to be viewed within body cavity, said illumination means mounted within the distal end of said endoscope, said illumination means comprising a plurality of LED's mounted to a ceramic substrate in an annular pattern surrounding an aperture centrally formed in said pattern and in said substrate whereby said substrate an aperture have a central axis coaxially aligned with a central axis of said endoscope." Further similarly, claims 29-36 specify in pertinent part the following limitations: "an optical head of the camera, the optical head having a shape and size whereby the head can be endoscopically inserted and positioned within the body cavity, the light source positioned in the optical head and comprising a plurality of light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture in the center of said pattern, said central aperture and said pattern of light emitting diodes having a central axis coaxially aligned with a central axis of the optical lens system." Accordingly, claims 10-17, 18, and 29-36 require inter alia LEDs arranged concentrically around a central light aperture and mounted at an end (of an endoscope) that is inserted into a bodily cavity.

The examiner fails to identify a persuasive suggestion to combine the teachings of the references. "[I]dentification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000) (citing In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998)). "Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant." Id., 55 USPQ2d at 1316 (citing In re Dance, 160 F.3d 1339, 1343, 48 USPQ2d 1635, 1637 (Fed. Cir. 1998); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)).

Here, although Pileski discloses "optical fibers **27** which are fanned out and arranged in an arc disposed in the annular space between the lens retainer **20** and the cylindrical wall **28** of the insertion tube," col. 4, ll. 4-7, the examiner fails to show some motivation, suggestion, or teaching of the desirability of disposing Kakinuma's "light emitting chips

106, 107, 108," col. 12, l. 61, in the arrangement taught by Pileski. The examiner's stated reasons, viz., "for the same lighting purposes," (Examiner's Answer at 5), and "for the same well known purposes as claimed," (id.), do not address, let alone persuade us of, the desirability of his proposed rearrangement.

Relying on Nagasaki to "teach[] wireless transmitter means (12, 13 of Figure 1) for transmitting video data from video sensor means 4 of Figure 1 to a remote receiver," (Examiner's Answer at 7); Uehara to "disclose[] an electronic endoscopic apparatus as shown in Figure 2, and teach[] the conventional use of generation of chrominance and luminance color video signals (see 46-48 of Figure 2) from light reflected from objects;" (id. at 8); and Moore "disclose[] a color endoscope with charged coupled device and television viewing as shown in Figures 1, 2, and 5, and substantially the same endoscopic video camera system as claimed in claims 12 and 13," (id. at 9-10); the examiner fails to allege, let alone show, that the additional references cure the aforementioned deficiency. Because Kakinuma's light emitting

chips are not disposed around a central light aperture, and there is no evidence that Pileski's arrangement of optical fibers would have been desirable for the former reference's chips, we are not persuaded that teachings from the prior art would have suggested the proposed combination of Kakinuma and Pileski nor the limitations of "b. illumination means mounted at the distal end of said sheath; ... e. the illumination means comprising a plurality of light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture in the center of said pattern, said central aperture having a central axis aligned with and coaxial with a central axis of said objective lens system and with a central axis of said sheath;" "illumination means mounted at the distal end of a camera sheath, the illumination means comprising a plurality of light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture, said central aperture having a central axis coaxially aligned with a central axis of said camera sheath;" "[a] compact light source for illuminating an object while in a body cavity, said light source comprising first, second, and third color LED's fixed to a common

substrate, ... said first, second, and third color LED's arranged in a generally concentric pattern surrounding a light transmissive aperture centrally disposed in said substrate in the center of said pattern, and said substrate and aperture having a central axis coaxial with a central axis of an objective lens system of an endoscopic camera used in conjunction with said compact light source;" "illumination means for emitting light from said system toward an object to be viewed within body cavity, said illumination means mounted within the distal end of said endoscope, said illumination means comprising a plurality of LED's mounted to a ceramic substrate in an annular pattern surrounding an aperture centrally formed in said pattern and in said substrate whereby said substrate and aperture have a central axis coaxially aligned with a central axis of said endoscope;" and "an optical head of the camera, the optical head having a shape and size whereby the head can be endoscopically inserted and positioned within the body cavity, the light source positioned in the optical head and comprising a plurality of light emitting diodes arranged in a generally concentric pattern surrounding a light transmissive central aperture in the

center of said pattern, said central aperture and said pattern of light emitting diodes having a central axis coaxially aligned with a central axis of the optical lens system."

Therefore, we reverse the rejection of claims 10, 11, 15, 17, and 19 as being obvious over Kakinuma in view of Pileski, of claims 29-34 and 36 as being obvious over Kakinuma in view of Pileski further in view of Nagasaki, of claims 29-34 and 36 as being obvious over Kakinuma in view of Pileski further in view of Nagasaki even further in view of Uehara, of claims 12 and 13 as being obvious over Moore in view of Kakinuma further in view of Pileski, and of claim 14 as being obvious over Moore in view of Kakinuma further in view of Pileski even further in view of Nagasaki.

CONCLUSION

In summary, the rejection of claims 10-17, 18, and 29-36 under § 103(a) is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
)	
)	
)	
)	BOARD OF PATENT
ERROL A. KRASS)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
)	
LANCE LEONARD BARRY)	
Administrative Patent Judge)	

LLB/gjh

Appeal No. 1999-2039
Application No. 08/531,424

Page 14

WADDEY & PATTERSON
414 UNION STREET, SUITE 2020
BANK OF AMERICA PLAZA
NASHVILLE, TN 37219

Once signed, forward to Team 3 for mailing.

APPEAL NO. 1999-2039 - JUDGE BARRY
APPLICATION NO. 08/531,424

APJ BARRY - **2 copies**

APJ KRASS

APJ THOMAS

Prepared By: APJ BARRY (GJH)

DRAFT SUBMITTED: 06 Nov 02

FINAL TYPED:

Team 3:

I typed all of this opinion.

Please check spelling, cites, and quotes.

Do NOT change matters of form or style.

For any additional reference provided, please prepare PTO 892
and include copy of references